BOYD COUNTY, KENTUCKY

Boyd County is part of the Huntington-Ashland Metropolitan Statistical Area (MSA) and is located to the south-southeast of Greenup County, Kentucky, and to the east-northeast of Carter County, Kentucky, and north of Lawrence County, Kentucky.

EPA's June 29, 2004 proposal on appropriate designations for Kentucky included Boyd County as nonattainment based on the following criteria:

- EPA indicates that Boyd County has significant SO_x, NO_x, and PM emissions, in close proximity to the violating MSA monitors and that anticipated controls would not be implemented until after designations are made;
- Even though Boyd County has monitoring data very close to the standard, EPA states that this indicates a potential to contribute to the $PM_{2.5}$ violations in the area;
- EPA indicates that the population and population density of Boyd County has a potential to contribute to the $PM_{2.5}$ violations in the area.

Emissions Data

In Kentucky's February recommendations, 1999 NEI data was used in the original analysis. As stated in the General Comments portion of this document, EPA had recommended that states use the 1999 data since it was the latest available to states at that time.

It is important to note here that EPA, in their review, used the 2001 NEI data which provided different data than what EPA had recommended that states use. The 2001 NEI data, nor the methodology used in the calculations for that inventory have been made available to states for review.

However, in EPA's June 29, 2004 letters to states, EPA looked outside the original MSA boundaries to determine if large emissions contributions from adjacent areas were having an impact on $PM_{2.5}$ levels in many of the areas. Specifically, in the Huntington-Ashland metropolitan area, EPA in a separate letter to Ohio, has also recommended that Adams, Gallia, and Scioto Counties in Southeastern Ohio also be included as nonattainment areas due to the substantial, significant emissions of SO_x, NO_x, and PM from those counties.

Adams and Gallia Counties alone contribute 80% of all SO_x within the counties EPA has recommended as nonattainment for $PM_{2.5}$. By comparison, Boyd County emits only 3% of SO_x emissions from the counties recommended by EPA as having the potential to impact the violating monitors. A similar comparison

can be made with both NO_x and PM. Boyd County's NOx emissions rank at 7% of the total EPA recommended areas, and PM at 9%. In a detailed review of EPA's recommended areas to be designated nonattainment, Boyd County ranks consistently at less than 10% of combined emissions contributions within EPA's proposed nonattainment boundaries. See Figures 1-4 below.

Figure 1

Ashland Area SOx Emissions in EPA Proposed Nonattainment Counties

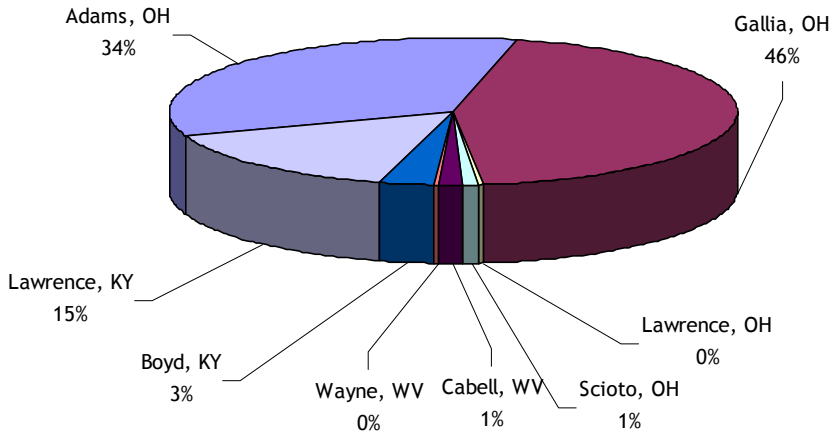


Figure 2

Ashland Area NOx Emissions in EPA Proposed Nonattainment Counties

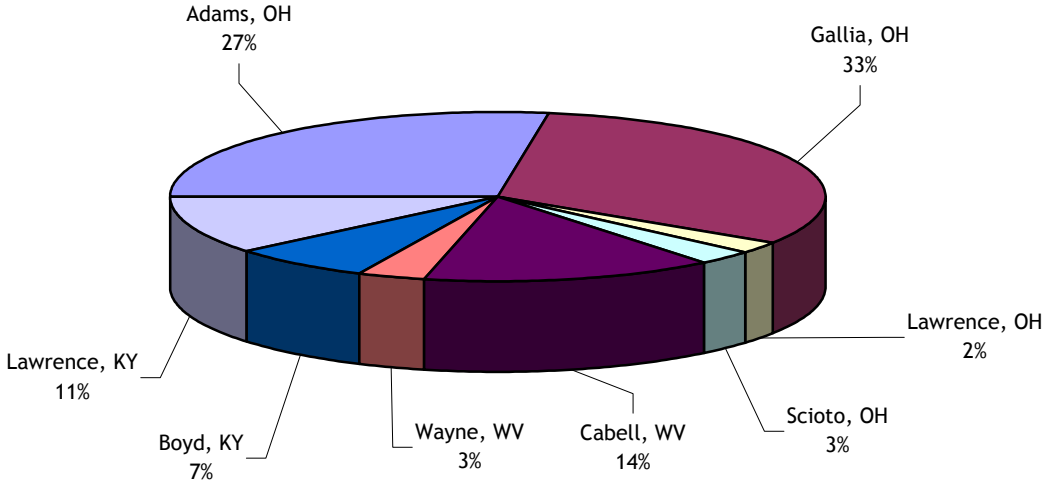


Figure 3

Ashland Area PM Emissions in EPA Proposed Nonattainment Counties

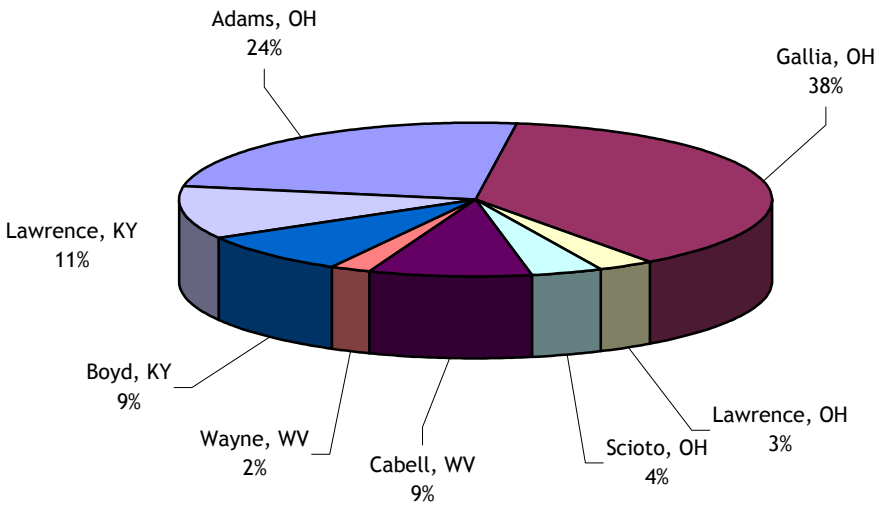
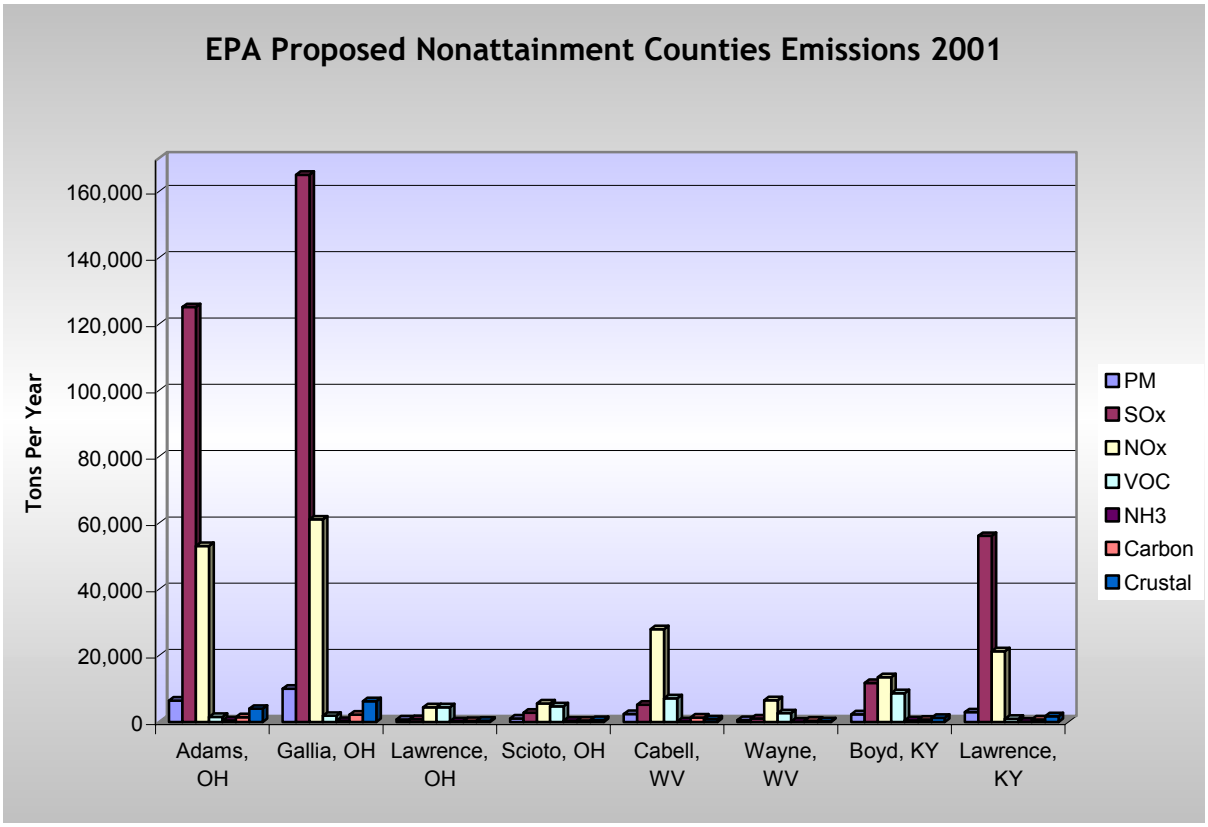


Figure 4



Additional Emission Reductions in Boyd County

EPA's response to Kentucky also stated that the additional controls documented in the February submittal at Calgon Carbon and Catlettsburg Refining, LLC were not being considered due to the implementation date being at the end of 2005, well after designations are made. Kentucky offers the following additional information.

Calgon Carbon Corporation

Emission reductions documented at Calgon Carbon occurred in 2002 with the shut down of the C line activators.

Additional sulfur dioxide emission limits and operating restrictions have been imposed on Calgon Carbon Corporation, a facility that has the potential to contribute to $PM_{2.5}$ levels in the area, by the issuance of Title V permit V-00-015, issued April 27, 2004. Calgon Carbon shutdown its C-Line Activators in 2002 thus creating significant actual SO_2 reductions which have not been documented in the 2001 NEI data used by U.S. EPA in the June emissions analysis.

Additionally, the current permit requires that sulfur dioxide controls of at least 90% efficiency, which results in 304 tons per year decrease, be in place if these Activators are ever re-started. In addition, the Package Boiler's allowable SO2 emissions have been reduced by the requirement that only natural gas be used as fuel. Previously the use of fuel oil was permitted. See reductions noted in Table 1 and Figure 5 below.

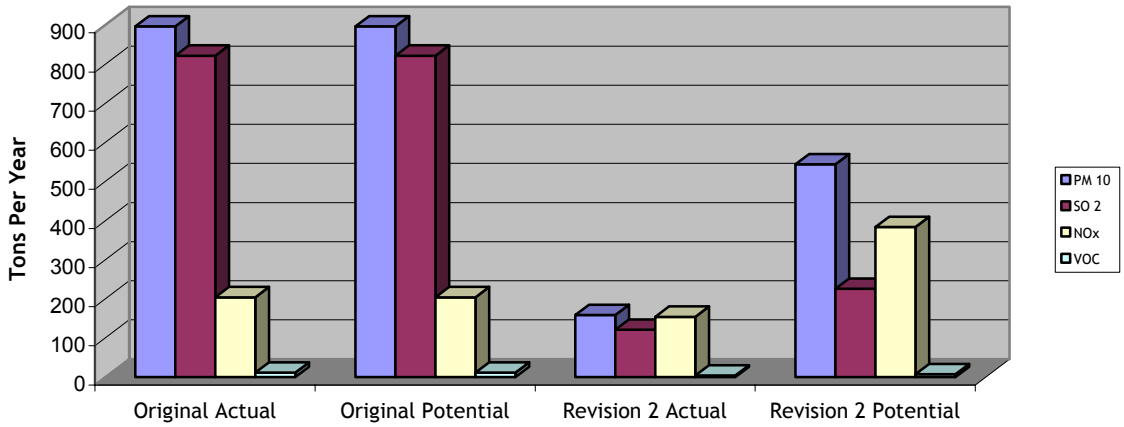
This permit can be found on the Kentucky Division for Air Quality website at: http://www.air.ky.gov/NR/rdonlyres/C2470F5E-8021-43E6-BF33-5268DB5503F1/0/FinalR2_3104.pdf

Table 1
Reductions for Calgon Carbon Corporation

Pollutant	Original Actual (tpy)	New Permitted Actual (tpy)	Actual Emission Reductions (tpy)
PM_{10}	897	159	**738**
SO_2	822	121	**701**
NOx	204	154	**50**
VOC	11	4	**7**

Figure 5

Calgon Carbon Reductions in 2004 Title V Permit



Although there is some indication that the NOx emissions in the latest permit have the potential to increase, actual NOx emissions are anticipated to remain below the original potential emissions levels. Additionally, speciation monitoring data for the Ashland area show that the $PM_{2.5}$ levels in the area are primarily SO_x and carbon related.

Catlettsburg Refining, L.L.C.

Catlettsburg Refining, L.L.C. is undergoing a project entitled the Refinery Modernization Project, which involves new operational and emissions limitations. The proposed Refinery Modernization Project involves installation of new equipment and upgrading of existing equipment. This will allow the refinery to produce cleaner-burning transportation fuels, to improve yields, to utilize a wider range of purchased feed materials, and to reduce fixed and operating costs. In addition, the project will substantially reduce emissions of SO_2 and NOx from the refining operations mainly due to the fact that the new catalytic cracker will now be subject to much more stringent New Source Performance Standards.

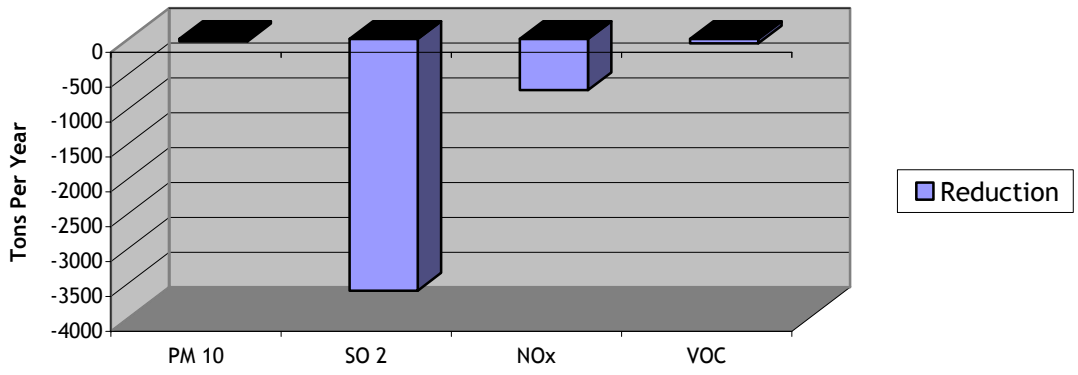
The following actual emission reductions are expected to occur by 2006 (see Figure 6 below):

PM	- 33 tons per year (decrease)
PM_{10}	- 33 tons per year (decrease)
SO_2	- 3,605 tons per year (decrease)
NO_X	- 730 tons per year (decrease)
CO	- 4 tons per year (decrease)
VOC	- 64 tons per year (decrease)

The most recent modification to the permit that requires these limitations was issued June 4, 2004, and can be found on the Kentucky Division for Air Quality website at:
http://www.air.ky.gov/NR/rdonlyres/6EB5FA41-A66E-4097-A763-7936B5FB6EFF/0/DraftR2.pdf

Figure 6

Catlettsburg Refining, L.L.C. Reductions in Permit VF-02-001 Revision 2 2004



Although these controls will not be implemented before designations, the reductions are an ongoing process and will be implemented before any control strategies are required to be submitted to U.S. EPA in 2008.

Additional Regional/National Controls

The implementation of new federal rules to decrease the amount of sulfur in both gasoline and diesel fuel will significantly decrease the amount of SO_2 in the entire area. Because of the Low Sulfur Diesel Rule, in 2007, new clean engines operating on 15-ppm sulfur diesel fuel will reduce NOx emissions by 50%, and reduce PM emissions by more than 90%. Due to the Tier 2 Vehicle and Gasoline Sulfur program, by 2006 average national gasoline sulfur levels will be 90% lower.

Upon implementation of the Clean Air Interstate Rule (CAIR) SO_2 emissions from power plants will be reduced nationwide by 3.6 million tons in 2010 (approximately 40 percent below current levels) and by another 2 million tons per year when the rules are fully implemented (approximately 70 percent below current levels). NOx emissions would be cut by 1.5 million tons nationwide in 2010 and 1.8 million tons annually in 2015 (about 65 percent below today's levels).

The first phase of compliance under the CAIR rule to reduce both SO_2 and NO_x emissions would be required by 2010, the proposed attainment date for $PM_{2.5}$ nonattainment areas, allowing substantial emission reductions in the area.

Monitoring Data & Trends

As can be seen in Figure 7 below, the speciation data from Kentucky's Ashland speciation monitor indicates that sulfate and organic carbon are the major components of the $PM_{2.5}$ values. In Figure 1 above and Figure 8 below, Boyd County, Kentucky, contributes only 3% of the SO_2 in the area, and only 9% of the organic carbon within EPA's proposed nonattainment counties.

Figure 7

Ashland Speciation Data 12/9/01 - 12/11/03
Average Concentration (µg/m³)

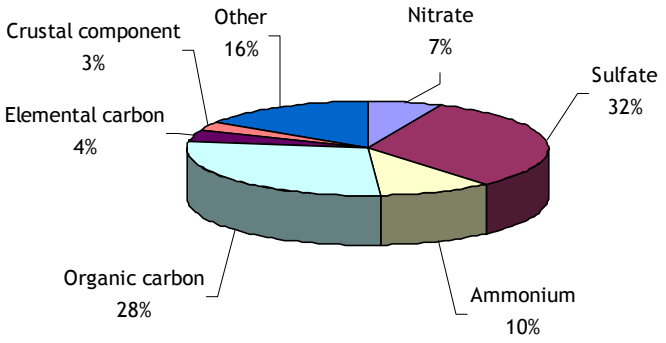
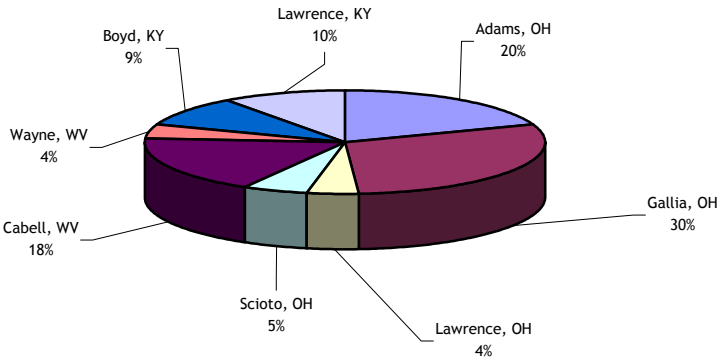


Figure 8

Ashland Area Carbon Emissions in EPA Proposed Nonattainment Counties

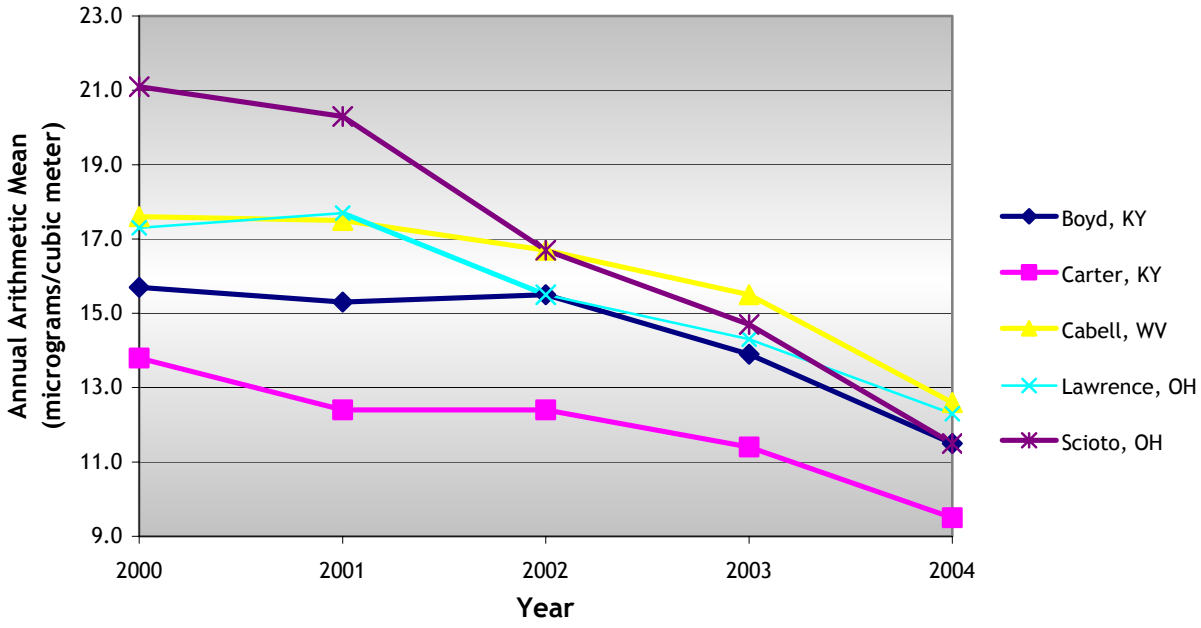


As EPA notes in its June 29, 2004 letter, the monitor located in Boyd County shows attainment with the $PM_{2.5}$ standard, with a 2001-2003 design value of

14.9 $\mu g/m^3$. In addition to showing attainment with the standard, the annual concentrations continue to show a downward trend as depicted in Figure 9 below, which utilized data from the year 2000 through April 2004.

Figure 9

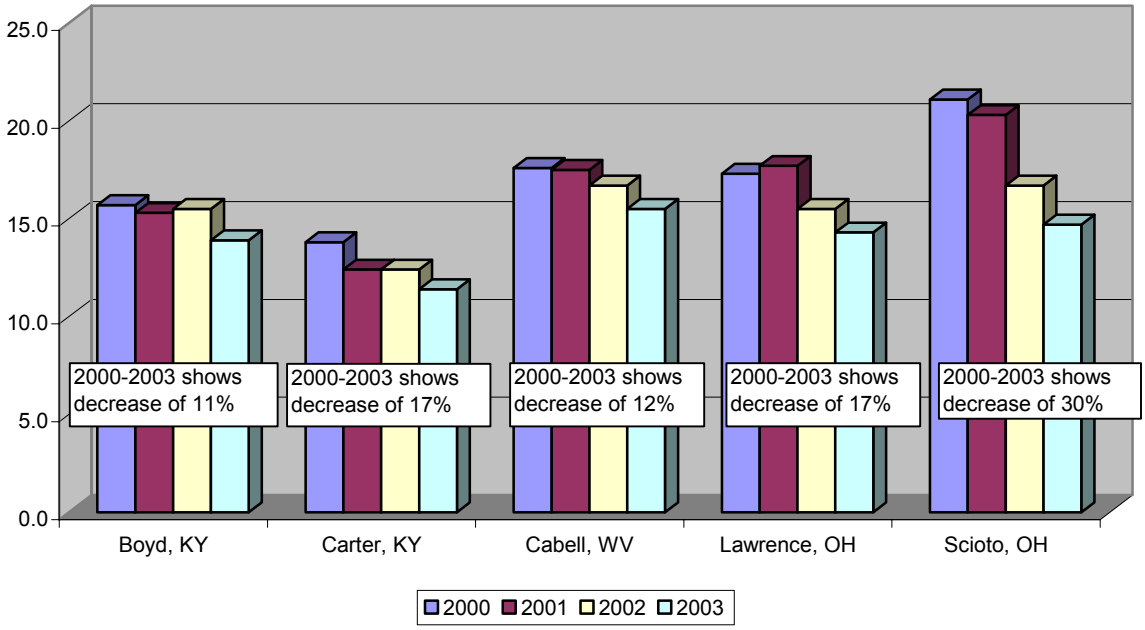
Ashland Area PM 2.5 Trend Utilizing Most Current Available Data



$PM_{2.5}$ levels throughout the entire region have been steadily decreasing over the last four years. Specifically, the $PM_{2.5}$ levels in Boyd County have decreased by 11%, Carter County's levels have decreased by 17%, 12% in Cabell County, 17% in Lawrence County, and 30% in Scioto County (See Figure 10 below).

Figure 10

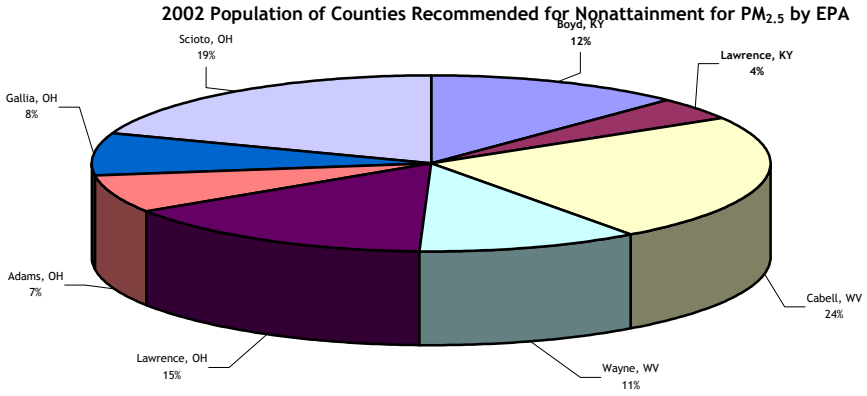
Decline in PM Values for Ashland Area



Population Density and Growth

EPA stated that 2002 population levels indicated Boyd County had the potential to impact $PM_{2.5}$ violations in the area. Although Boyd County has the third largest population in the MSA, it makes up only 16% of the population in the entire MSA and only 12% when compared to the West Virginia and Ohio counties proposed for nonattainment, see Figure 11 below.

Figure 11



Additionally, the 2000 census data indicates Boyd County's population from 1990 through 2000 decreased by approximately 2.7% (51,150 to 49,752). The population is further projected to decrease by an additional 3.2% between 2000 and 2010.

Therefore, Kentucky believes that the population in Boyd County does not have the potential to contribute to $PM_{2.5}$ violations in the area.

Conclusion

Based on the factors discussed above, Kentucky believes that Boyd County should be designated attainment for the $PM_{2.5}$ standard.

- Kentucky believes that EPA's use of the weighted emissions scoring approach was skewed. EPA did not include adjacent county emissions in the total emissions being analyzed for the area. If the emissions from the entire area under review were used, vs just those within the MSA, a very different result in the weighted emissions scores would have occurred. Boyd County would not have the potential to contribute significantly to $PM_{2.5}$ levels within the region.

- $PM_{2.5}$ levels continue to decline throughout the entire region. From a review of all monitors in the region, an average 17% decline in $PM_{2.5}$ levels has occurred from 2000 through 2003. Every monitor in the region is currently showing values well within attainment of the annual $PM_{2.5}$ standard using 2002 through 2004 data.

- The population of Boyd County is not significant enough to have the potential to impact $PM_{2.5}$ levels in the region. Population in this area has shown a continuing decline over the last several years and that decline is anticipated to continue. Boyd County's population actually represents only 16% of the actual MSA and, when compared with the population of the counties proposed by EPA for nonattainment, only 12% of the total population.

- Additional emission reductions on a national and regional level will provide substantial benefits in the region. The anticipated sulfur reductions due to the Low Sulfur Diesel Rule, the Tier 2 Vehicle and Gasoline Sulfur programs, and the Clean Air Interstate Rule (CAIR) will further lower pollutant levels within this region.

- The substantial emission reductions that have already occurred from Calgon Carbon, and those that will occur at the Catlettsburg Refining operations result in over 4,000 tons of SO_2 being removed from the area every year, bringing total for Boyd County well below EPA's 10,000 TPY

significance level for any one pollutant. These controls have been made permanent and enforceable and will provide long-term emission reductions to the region.

To have this county designated nonattainment would invoke additional substantial and unnecessary requirements on local government planning agencies. Substantial local emission reductions from Boyd County have already occurred, or will occur well before attainment dates for this standard. Drastic emission reductions are scheduled to occur in the mobile sector throughout the next several years that will greatly impact pollutant levels in the area. In addition, reductions anticipated by the CAIR provisions, the air monitoring data demonstrating attainment of the $PM_{2.5}$ Standard, and the decline in $PM_{2.5}$ levels throughout the entire region, lead to the conclusion that Boyd County, Kentucky, should be designated attainment for the $PM_{2.5}$ Standard.